

CALPINE CORPORATION

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NYSE CPN

October 13, 2017

Compliance and Enforcement Division Bay Area Air Quality Management District 375 Beale Street, Suite 600 San Francisco, CA 94105



Re: Delta Energy Center Facility B2095

Title V Semi-Annual Continuous Emission Monitoring Report Reporting Period: April 1, 2017 through September 30, 2017

Attn: Title V Reports

Enclosed is the Title V <u>Semi-Annual Continuous Emissions Monitoring Report</u> for the Delta Energy Center (DEC) for the reporting period from April 1, 2017 through September 30, 2017.

DEC is currently in compliance with District CEMS regulations. There were no Notices of Violation (NOVs) issued to DEC during this period or any other enforcement action taken by the District.

If you have any questions, please contact Dale Donmoyer, General Manager (925) 252-2096 or Maria Barroso, EHS Specialist at (925) 529-8286.

As the Responsible Official, I certify that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

Sincerely,

Dale Donmover

Authorized Signatory and General Manager

Attachment

cc: Mr. Ali Anwar, California Energy Commission

Table VII – A Applicable Limits and Compliance Monitoring Requirements S-1, S-3, S-5 TURBINES

S-2, S-4, S-6 HEAT RECOVERY STEAM GENERATORS

			Future		Monitoring	Monitoring		Com	oliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Type		
NO _x	BAAQMD	N		125 ppm	BAAQMD	С	CEM	X	
	9-3-303				1-520.1				
1	BAAQMD	N		0.15 lb/MW-hr or 5 ppmv	BAAQMD	С	СЕМ	X	į
	9-9-301.2				9-9-501				
NO_x	SIP	N		9 ppmv @ 15% O ₂ , dry	SIP	С	СЕМ	х	
	9-9-301.3				9-9-501				
	NSPS, 40	Y		0.2 lb/MMBtu, 30-day	40 CFR	С	CEM	x	
	CFR 60.44			rolling average	60.48 (b) and		}		
	(a)(4)				BAAQMD			,	
					condition				i
				41	#17154				
NO _x	NSPS, 40	Y		75 ppmv, @ 15% O ₂ , dry	40 CFR	C	CEM	Х	
	CFR 60.332	1			60.334(c) and	•			
	(a)(1)			•	BAAQMD				
					Confition				
					17154, Part				
					39b				
		Y		None	40 CFR 75.10	С	CEM	X	
NO _x	BAAQMD	Y		19.2 lb/hr, for each turbine	BAAQMD	С	CEM	Х	
	condition		ļ	and HRSG combined,	condition			:	
	#17154,	ĺ		except during turbine	#17154,				
	part 22a			startup, shutdown, steam	part 39b				
	į	Ì	Ì	turbine cold start-up, or					
				combustor tuning period					
NO _x	BAAQMD	Υ	1	19.2 lb/hr, for each turbine	BAAQMD	P/A	Source test	X	
	condition	ļ		and HRSG combined,	condition		at maximum		
	#17154,			except during turbine	#17154,		load		
	part 22a			startup, shutdown, steam	part 43			Ì	
			ł	turbine cold start-up, or					
`				combustor tuning period		_			

			Future		Monitoring	Monitoring		Com	pliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date ·	Limit	Citation	(P/C/N)	Type	1 63	110
NO_x	BAAQMD	Y		0.00904 lb/MM BTU, for	BAAQMD	С	CEM	х	ļ
	condition			each turbine and HRSG	condition				
	#17154,			combined, except during	#17154,				ļ
	part 22a			turbine startup, shutdown,	part 39b		·		
				steam turbine cold start-up,					1
				or combustor tuning period		_			
NOx	BAAQMD	Y		0.00904 lb/MM BTU, for	BAAQMD	P/A	Source test	Х	
	condition			each turbine and HRSG	condition		at maximum		
	#17154,			combined, except during	#17154,		load		
	part 22a			turbine startup, shutdown,	part 43				
				steam turbine cold start-up,	ĺ				
				or combustor tuning period	i				
NO,	BAAQMD	Y		2.5 ppmv, @ 15% O ₂ , dry,	BAAQMD	P/A	Source test	x	
·	condition			for each turbine and HRSG	condition		at maximum		
	#17154,			combined, 1-hr average	#17154,		load		
	part 22b			except during turbine	part 43				1
				startup, shutdown, steam	-				
				turbine cold start-up, or			·		
				combustor tuning period		_	·		
NO _x	BAAQMD	Y		2.5 ppmv, @ 15% O ₂ , dry,	BAAQMD	С	СЕМ	X	
	condition			for each turbine and HRSG	condition				
	#17154,			combined, 1-hr average	#17154,] '
	part 22b			except during turbine	part 39b				
				startup, shutdown, steam					
l			l	turbine cold start-up, or					}
i			ļ	combustor tuning period					
NO _x	BAAQMD	Υ		240 lb/turbine during	BAAQMD	С	CEM	X	ĺ
	condition			start-up	condition			•	
	#17154,			·	#17154,		ĺ		
	part 23	•	1		part 39b				
	BAAQMD	Y		80 lb/turbine during	BAAQMD	С	СЕМ	X	
	condition			shutdown	condition		İ		
ļ	#17154,	i			#17154,		ĺ		
	part 23				part 39b				
1	BAAQMD	Y		300 lb/turbine during steam	BAAQMD	С	СЕМ	X	
	condition	ļ		turbine cold start-up or	condition		}		
}	#17154,	.	}	combustor tuning period	#17154,	İ			
	part 23			5.	part 39b]			

			Future		Monitoring	Monitoring		Com	pliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Туре	103	
NO_x	BAAQMD	Y	:	1990.8 lb/day for turbines	BAAQMD	С	СЕМ	Х	
	condition			and HRSGs combined	condition				
-	#17154,		Ì		#17154,		'		Ì.
	part 36a				part 39b				
	BAAQMD	Y		240.2 ton/yr for turbines	BAAQMD	С	СЕМ	X	
	condition			and HRSGs combined	condition.				
	#17154,				#17154,				
	part 37a				part 39b				
СО	BAAQMD	Y		46.75 lb/hr, for each turbine	BAAQMD	P/A	Source test	X	
	condition			and HRSG combined,	condition		at maximum		
	#17154,			except during turbine	#17154,		and		
	part 22c			startup, shutdown, steam	part 43	•	minimum		
				turbine cold start-up, or	. `		load		
ľ		·		combustor tuning period					
СО	BAAQMD	Y		46.75 lb/hr, for each turbine	BAAQMD	С	СЕМ	X	
	condition			and HRSG combined,	condition				
	#17154,			except during turbine	#17154,				
	part 22c			startup, shutdown, steam	part 39b				1
	i i	!		turbine cold start-up, or					
				combustor tuning period					
	BAAQMD	Y		0.022 lb/MM BTU, for each	BAAQMD	P/A	Source test	Х	
ļ	condition	-		turbine and HRSG	condition		at maximum		
	#17154,			combined, except during	#17154,		and		Ì
	part 22c			turbine startup, shutdown,	part 43		minimum		
				steam turbine cold start-up,		İ	load		}
				or combustor tuning period					
	BAAQMD	Y		0.022 lb/MM BTU, for each	· BAAQMD	С	СЕМ	Χ .	
:	condition			turbine and HRSG	condition			•••	
Y	#17154,			combined, except during	#17154,		Ì		
	part 22c			turbine startup, shutdown,	part 39b				
	p 220			steam turbine cold start-up,	Parters				
İ			ļ	or combustor tuning period					
	BAAOMD	v		10 ppmv, @ 15% O ₂ , dry,	BAAQMD	С	СЕМ	Х	
	CO BAAQMD Y condition #17154,	}	for each turbine and HRSG	condition		C17141	Λ		
ļ			}	combined, 3-hr average	#17154,				
ļ	#17134, part 22d	ł		except during turbine	part 39b			į	
	part 22u			startup, shutdown, steam	part 370	Ì			
				turbine cold start-up, or					
		ļ		combustor tuning period			ļ		

			Future		Monitoring	Monitoring		Com	pliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Туре	103	1,0
СО	BAAQMD	Y	-	10 ppmv, @ 15% O ₂ , dry,	BAAQMD	P/A	Source test	X	
	condition	ĺ	ĺ	for each turbine and HRSG	condition		at maximum		
	#17154,			combined, 3-hr average	#17154,		and		
	part 22d			except during turbine	part 43		minimum		
]		 	startup, shutdown, steam			load		1
			i	turbine cold start-up, or					
				combustor tuning period					
со	BAAQMD	·Y		2514 lb/turbine during	BAAQMD	С	CEM	X	J
	condition			start-up	condition				
	#17154,	,			#17154,				
	part 23				part 39b				
co	BAAQMD	Y		902 lb/turbine during	BAAQMD	С	СЕМ	X	
	condition			shutdown	condition]
	#17154,				#17154,				ĺ
	part 23				part 39b				
	BAAQMD	Y		9,750 lb/turbine during	BAAQMD	С	CEM	X	
	condition			steam turbine cold start-up	condition				
	#17154,			or combustor tuning period	#17154,				
	part 23				part 39b				
co	BAAQMD	Y		12,756.4 lb/day for turbines	BAAQMD	c l	СЕМ	X	
	condition			and HRSGs combined	condition				
	#17154,				#17154,		}		
	part 36b				part 39b	···-			
co	BAAQMD	Y		1,105.4 ton/yr for turbines	BAAQMD	С	CEM	X	
	condition			and HRSGs combined	condition				
	#17154,				#17154,				
	part 37b				part 39b				
CO ₂		Y		None	40 CFR 75.10	С	fuel flow	X	
					1		monitor and		
							CO ₂		
							calculation		
SO ₂	BAAQMD	Y		GLC ¹ of 0.5 ppm for 3 min		N		N/A	İ
į	9-1-301	ĺ		or 0.25 ppm for 60 min or			1		
				0.05 ppm for 24 hours					
į	BAAQMD	Y	į	300 ppm (dry)		N		N/A	
	9-1-302								
	NSPS 40			0.2 lb/MMBtu, 24 hr		N	İ	N/A	
	CFR 60.43a			average except during					j
	(b)(2)			startup, shutdown					

			Future		Monitoring	Monitoring		Com	pliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Type		
SO ₂	NSPS	Y		0.015% (vol) @ 15% O ₂	NSPS 40	P/M	Fuel sulfur	X	
ŀ	40 CFR			(dry) or total sulfur content	CFR 60.334		content		
	60.333			of fuel less than or equal to	(h) (3) (ii)		testing		
				0.8% sulfur by weight	and				
				(8,000 ppmw)	BAAQMD				
1					Condition				
					17154, Part				
					57				
		Y		None	40 CFR		Fuel	X	
SO ₂		Y		None	l i			Λ	
					75.11, 40		measure-		
					CFR 75,		ments,		
					Appendix D,		calculations		
	DAAOMD.	Y		Fuel sulfur content of 1.0	part 2.3	P/M	Fuel testing	X	<u> </u>
	BAAQMD condition	ĭ		gr/100 scf	BAAQMD condition	F/1V1	ruet testing	Λ	
	#17154,	`		gt/100 Sc1	#17154, part				
}	part 14				57				
	BAAQMD	Y		18.42 ton/yr for turbines	BAAQMD	P/D	Fuel sulfur	X	ļ. <u>.</u>
	1 1	ı		and HRSGs combined	condition	F/D		Λ	
	condition			and riksos comonica	1 1		content		
	#17154,		. '		#17154, part 40		testing,		
	part 37e				part 40		natural gas		
	ŀ						usage		
							records,		
Opacity	DAACME	N		> Ringelmann No. 1 for no		N	calculations	N/A	
Ораспу	BAAQMD 6-1-301	N		more than 3 minutes in any	,	14		IN/AL	
	0-1-301			hour					
Ongoitu	CID	Y		> Ringelmann No. 1 for no		N		N/A	
Opacity	SIP 6-301	ı		more than 3 minutes in any		14		N/A	•
	0-201			hour					
FP	BAAQMD	N		0.15 grain/dscf		N		N/A	
	6-1-310			-					
FP	SIP	Y		0.15 grain/dscf		N		N/A	
	6-310			_					
	BAAQMD	N		0.15 grain/dscf @ 6% O ₂		N		N/A	
	6-1-310.3			_					
	SIP	Y		0.15 grain/dscf @ 6% O ₂		N		N/A	
	6-310.3			- -					

****			Future		Monitoring	Monitoring		Comp	oliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Туре	1 43	110
Opacity	BAAQMD	N		During tube cleaning,		N		N/A	
	6-1-304			Ringelmann No. 2 for 3					
				min/hr and 6 min/billion					
				btu/24 hours					
Opacity	SIP 6-304	Y		During tube cleaning,		N		N/A	
				Ringelmann No. 2 for 3					
				min/hr and 6 min/billion					
				btu/24 hours					
PM ₁₀	BAAQMD	Y		9.0 lb/hr, for each turbine	BAAQMD	P/A	Source test	Х	
	condition			and HRSG combined	condition		at maximum		
	#17154,				#17154,		load		
	part 22h				part 43				
PM ₁₀	BAAQMD	Y		0.00424 lb/MM BTU, for	BAAQMD	P/A	Source test	X	
	condition			each turbine and HRSG	condition	!	at maximum		
	#17154,			combined	#17154,		load		
	part 22h				part 43				
PM ₁₀	BAAQMD	Y		648 lb/day for turbines and	BAAQMD	P/D	Records,	X	
	condition			HRSGs combined	condition		calculations		
	#17154,				#17154,				
	part 36d				part 40				
	BAAQMD	Y		118.26 ton/yr for turbines	BAAQMD	P/D	Records,	X	
	condition			and HRSGs combined	condition		calculations		
	#17154,				#17154,		İ		
	part 37d				part 40				
POC	BAAQMD	Y		5.33 lb/hr (as CH4) for each	BAAQMD	P/A	Source test	x	
	condition			turbine, and HRSG	condition		at maximum		
	#17154,			combined except during	#17154,		load		
	part 22f			turbine startup, shutdown,	part 43				
				steam turbine cold start-up,	ĺ				
				or combustor tuning period					
POC	BAAQMD	Y		0.00251 lb/MM BTU (as	BAAQMD	P/A	Source test	х	•
	condition	ĺ		CH4) for each turbine, and	condition		at maximum		
	#17154,	}		HRSG combined except	#17154,		load		
	part 22f			during turbine startup,	part 43			į	
				shutdown, steam turbine				İ	
Ì				cold start-up, or combustor					
		1		tuning period	<u> </u>		į		

			Future		Monitoring	Monitoring		Com	oliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Туре		110
	BAAQMD	Y		48 lb/turbine during	BAAQMD	P/D	Records,	X	
	condition			start-up	condition	į	calculations		
	#17154,				#17154,				ĺ
	part 23			ļ	part 40	<u> </u>			
POC	BAAQMD	Y		16 lb/turbine during	BAAQMD	P/D	Records,	Х	
	condition			shutdown	condition		calculations		{
	#17154,				#17154,				ĺ
	part 23				part 40				
	BAAQMD	Y		96 lb/turbine during	BAAQMD	P/D	Records,	Х	
	condition			steam turbine cold start-up	condition		calculations		
	#17154,			or combustor tuning period	#17154,				
	part 23			•	part 40				
	BAAQMD	Y	·	478.2 lb/day (as CH4) for	BAAQMD	P/D	Records,	X	
	condition	.		turbines and HRSGs	condition		calculations		
	#17154,	·		combined	#17154,				
	part 36c	ŀ			part 40				
POC	BAAQMD	Y		64.68 ton/yr for turbines	BAAQMD	P/D	Records,	Х	•
	condition	-		and HRSGs combined	condition		calculations		
	#17154,				#17154,				
	part 37c				part 40				
NH ₃	BAAQMD	N		10 ppmv, @ 15% O ₂ , dry,	BAAQMD	С	Ammonia	Х	
-	condition			averaged over 3 hrs for	condition		injection		
	#17154,			each turbine and HRSG	#17154,		rate monitor		
	Part 22e			combined except during	part 39c				
				turbine startup, shutdown,					
				steam turbine cold start-up,			'		
				or combustor tuning period					
Formal-	BAAQMD	N		5691 lb/yr for turbine and	BAAQMD	P/D	Records,	Х	
dehyde	condition			HRSGs combined	condition		calculations		
-	#17154,	l			#17154,			ļ	
ľ	part 38a	1	}		part 41]	})	
Formal-	BAAQMD	N		5691 lb/yr for turbine and	BAAQMD	P/every two	Source test	Х	
dehyde	condition			HRSGs combined	condition	years on P-		ľ	
•	#17154,		ł		#17154,	1, P-2, or	1		
	part 34a]	,	part 44	P-3	ļ		
Benzene	BAAQMD	N		704 lb/yr for turbines,	BAAQMD	P/I)	Records,	Х	
	condition			HRSGs, and auxiliary	condition		calculations		
	#17154,			boiler combined	#17154,	Ì			
	part 38b	1			part 41				

			Future		Monitoring	Monitoring		Com	pliance
Type of	Citation of	FE	Effective		Requirement	Frequency	Monitoring	Yes	No
Limit	Limit	Y/N	Date	Limit	Citation	(P/C/N)	Туре		
	BAAQMD	N		704 lb/yr for turbines and	BAAQMD	P/every two	Source test	X	
	condition			HRSGs combined	condition	years on P-			
	#17154,				#17154,	1, P-2, or	ĺ		
	part 38b				part 45	P-3			
Specified	BAAQMD	N		120 lb/yr for turbines,	BAAQMD	P/D	Records,	х	
PAH's	condition			HRSGs, and auxiliary	condition		calculations		}
}	#17154,			boiler combined	#17154,				ł
	Part 38c				part 41				
	BAAQMD	N		120 lb/yr for turbines and	BAAQMD	P/every two	Source test	X	
	condition			HRSGs combined	condition	years on P-	İ		
	#17154,				#17154,	1, P-2, or		•	
=	Part 38c				part 41	P-3			
Heat	·	Y		None	40 CFR 75.10	С	Fuel meter,	X	
input	ĺ						firing		ļ
limit					ļ		monitor,		
				· · · · · · · · · · · · · · · · · · ·			calculations		
Heat	BAAQMD	Y		2,125 MM BTU/hr (HHV),	BAAQMD:	С	Fuel meter,	X	
input	condition			3-hr average for each	condition		firing		
limit	#17154,			Turbine and HRSG, total	#17154,		monitor,		
	part 15				part 39a		calculations		
	BAAQMD	Y		50,024 MM BTU/calendar	BAAQMD	С	fuel meter,	X	
	condition			day (HHV), for each	condition		firing		
	#17154,	1	,	Turbine and HRSG, total	#17154,		monitor,		
	part 16				part 39a		calculations		
l·leat	BAAQMD	Y		53,188,532 MM BTU/yr	BAAQMD	С	fuel meter,	X	
Input	condition	1		(HHV) for S-1, S-3, S-5,	condition		firing		
Limit	#17154,	İ	i	Turbines and S-2, S-4, S-6	#17154,		monitor,		
	part 17			HRSGs combined	part 39a		calculations		
Steam	BAAQMD	Y		30 hours per year per	BAAQMD	P/H	records	Х	
turbine	condition			turbine	condition		-		
cold start-	#17154,				#17154,		İ		
up or	part 24		ļ		part 62				
combus-		ļ	Į	·		ļ			Į.
tor tuning			ľ						1

Table VII – B Applicable Limits and Compliance Monitoring Requirements S-9, COOLING TOWER

Type of	Citation of	FE	Future Effecti	cti	Monitoring Requirement	Monitoring Frequency	Monitoring	Cor	npliance
Limit	Ļimit	Y/N	//N ve Date	Limit	Citation	(P/C/N)	Туре	Yes	No
Opacity	BAAQMD 6-1-301	N		> Ringelmann 1.0 for no more than 3 minutes in any hour		N		N/A	
Opacity	SIP 6-301	Y		> Ringelmann 1.0 for no more than 3 minutes in any hour		N		N/A	
FP	BAAQMD Regulation 6-1-310	N		0.15 gr/dscf		N		N/A	
FP	SIP Regulation 6-310	Y		0.15 gr/dscf		N		N/A	
Drift Rate	BAAQMD condition #17154, part 58	Y		0.0005%	BAAQMD condition #17154, part 59	p	Initial source test	х	,
Total Dissolved Solids	BAAQMD condition #17154, part 58	Y		5233 ppmw (mg/l)	BAAQMD condition #17154, part 58	P/D	Sampling and testing of cooling tower water	х	

Table VII – C Applicable Limits and Compliance Monitoring Requirements S-10, FIRE PUMP DIESEL ENGINE

Type of	Citation of	FE	Future Effective	1	Monitoring Requirement	Monitoring	Monitoring	Coi	mpliance
Limit	Limit	Y/N	Date	Limit	Citation	Frequency (P/C/N)	Type	Yes	No
Opacity	BAAQMD Regulation 6-303.1	N		Ringelmann 2.0 for 3 minutes in any hour		N		N/A	
Opacity	SIP Regulation 6-303.1	Y		Ringelmann 2.0 for 3 minutes in any hour		N		N/A	
FP	SIP Regulation 6-310	Y		0.15 gr/dscf		N		N/A	
FP	BAAQMD Regulation 6-1-310	N		0.15 gr/dscf		N		N/A	
SO ₂	BAAQMD 9-1-301	Y		GLC of 0.5 ppm for 3 min. or 0.25 ppm for 60 min. or 0.05 ppm for 24 hours		N		N/A	
SO₂	BAAQMD 9-1-304	Y		Sulfur Content < 0.5% by weight		N		N/A	
Reliability Related Hours	BAAQMD 9-8-330	N	1/1/12	100 hours until 1/1/12 50 hours after 1/1/12	9-8-502 9-8-530	P/E	Totalizing meter record keeping	х	
Reliability Related Hours	BAAQMD Condition #22851, part 1	N		34 hours per calendar year	BAAQMD Condition #22851, part 3, 4	P/E	Totalizing meter record keeping	Х	

Table VII – D Applicable Limits and Compliance Monitoring Requirements S-11, NATURAL GAS FIRED EMERGENCY GENERATOR

Type of	Citation of	FE	Future Effecti		Monitoring	Monitoring Frequency	Monitoring	Соп	npliance
Limit	Limit	Y/N	ve Date	Limit	Requirement Citation	(P/C/N)	Type	Yes	No
Opacity	BAAQMD 6-1-303.1	N		< Ringelmann 2.0, except for no more than 3 minutes in any hour		N		N/A	
Opacity	SIP 6-303.1	Y		 Ringelmann 2.0, except for no more than 3 minutes in any hour 		N		N/A	
FP	BAAQMD Regulation 6-1-310	N		0.15 gr/dscf		N		N/A	
FP	SIP Regulation 6-310	Y		0.15 gr/dscf		N		N/A	
SO ₂	BAAQMD Regulation 9-1-301	Y		GLC of 0.5 ppm for 3 min. or 0.25 ppm for 60 min. or 0.05 ppm for 24 hours		N		N/A	
SO ₂	BAAQMD Regulation 9-1-302	Y		300 ppm (dry)		N		N/A	
Reliability Related Hours	BAAQMD 9-8-330	N	1/1/12	100 hours until 1/1/12 50 hours after 1/1/12	9-8-502	P/E	Totalizing meter record keeping	Х	
Reliability Related Hours	BAAQMD Condition #21609, part 1	Y		100 hours per calendar year	BAAQMD Condition #22231, part 2 and 3	P/E	Record keeping	х	